

REMARKS

The amendment to claim 1 to recite that the fluorine-containing copolymer having functional group is a fluorine-containing resinous copolymer having functional group, further distinguishes the invention from the elastomeric copolymer of JP 54-163985A and DE 197 16 116, as cited in the Supplemental European Search Report dated October 18, 2001 and of record in the present application. The fluorine-containing copolymer of the invention is described as being "resinous", for example, at page 2, line 17; at page 2, line 27; and at page 3, line 15 of the specification. In addition, the copolymer has as a melting point as described at page 6, lines 13-17 of the specification and in claim 2.

Furthermore, in a preferred embodiment as described at page 4, lines 18-19 of the specification and as claimed in amended claim 1, the hydrocarbon vinyl compound unit having functional group is a hydrocarbon vinyl ether compound unit having functional group.

Entry of the amendments is respectfully requested.

Review and reconsideration on the merits are requested.

Claims 1-4 were rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over U.S. Patent 3,445,434 to Stilmar or EP 0 481 478 (EP '478). The Examiner considered each of Stilmar and EP '478 as meeting the terms of the claims, either explicitly or under principles of inherency.

Particularly, Stilmar was cited as disclosing fluorine-containing copolymers derived from tetrafluoroethylene and vinyl esters (of C₂ to C₁₀ alkane carboxylic acids), the resulting copolymer having a fluorine content of not less than 10% by weight and being insoluble in organic solvent (Abstract, col. 2, lines 33-50, and col. 2, line 1). EP '478 (Comparative Example

at page 5, *et seq.*) was cited as disclosing a copolymer comprising tetrafluoroethylene and hydroxybutyl vinyl ether having a fluorine content of not less than 10% and being insoluble in THF.

Applicants respectfully traverse for the following reasons.

Stilmar discloses that the monomer introducing a functional group into the polymer is an ethylenically unsaturated mono- and dicarboxylic acid having from 3 to 11 carbon atoms such as acrylic acid, itaconic acid, undecylenic acid or a salt or anhydride. See claim 1 and Example 8 of Stilmar.

These monomers are not a “hydrocarbon vinyl ether compound unit having functional group” as required by amended claim 1. Moreover, the hydrocarbon vinyl ether compound reacts with the fluoroolefin easily to obtain a copolymer which is substantially insoluble in THF (page 2, lines 15-18 and page 5, lines 21-23 of the specification).

Thus, the present claims are neither anticipated nor obvious over Stilmar.

On the other hand, the dry copolymer of the Comparative Example of EP ‘478 which is completely insoluble in tetrahydrofuran (THF) is a crosslinked polymer. Namely, the completion of crosslinking is determined by solubility in THF. This means that the polymerized polymer before crosslinking is soluble in THF. The crosslinked polymer does not have a cure site (functional group) because the cure site is consumed during the crosslinking.

Therefore, EP ‘478 does not disclose the fluorine-containing resinous copolymer having functional group as required by amended claim 1.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/674,249

Moreover, the merit of insolubility in THF according to the present invention is described at page 4, lines 3-17 of the specification. Particularly, if a person of ordinary skill does not recognize the technical merit of insolubility in THF, the effects of the present invention cannot be expected based on any of Stilmar and EP '478, considered alone or in combination thereof.

In view of the amendment to the claims and for the reasons stated above, it is respectfully submitted that the present claims are patentable over Stilmar and EP '478, and withdrawal of the foregoing rejections is respectfully requested.

Withdrawal of all rejections and allowance of claims 1-4 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

Respectfully submitted,



Abraham J. Rosner
Registration No. 33,276

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE



23373

PATENT TRADEMARK OFFICE

Date: June 18, 2003